

# Lessons Learned From Small Store Programs to Increase Healthy Food Access

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**Objectives:** To document implementation challenges and opportunities associated with small store interventions. **Methods:** Case study analysis of small store interventions conducted in 4 regions of the US. We systematically generated matrices to compare and contrast lessons learned to advance implementation science. **Results:** Seven thematic areas were identified including: establishing relationships with stores, store owner and customer relationships,

selection of intervention approaches, stocking healthier foods, evaluation, maintenance of changes, and dissemination. **Conclusions:** This information provides guidance to researchers and practitioners wishing to design, implement, and evaluate small store interventions.

**Key words:** intervention, small stores, lessons learned, food

*Am J Health Behav.* 2014;38(2):307-315

DOI: <http://dx.doi.org/10.5993/AJHB.38.2.16>

Small food stores are common in low-income settings.<sup>1-9</sup> These stores typically, though not always,<sup>10</sup> offer limited healthy options<sup>5-8,11-15</sup> and are associated with overconsumption of high-fat, high-sugar foods<sup>12,13,16-19</sup> and higher rates of obesity and chronic disease.<sup>15,20-25</sup> In recent years, researchers and public health practitioners have increasingly sought to improve the food environment and purchasing of healthy foods in small stores.<sup>26-30</sup> Federal programs such as the American Reinvestment and Recovery Act of 2009, the Patient Protection and Affordable Care Act, and the Healthy Food Financing Initiative have bolstered healthy corner store efforts by providing \$650 million, \$100 million, and \$50 million in funding, respectively, to support efforts to increase access to healthy, affordable food.

Improving access to healthy foods has been identified as a key strategy for obesity prevention and control by many national organizations including

the Institute of Medicine, the Centers for Disease Control and Prevention, and the American Heart Association. It is part of a comprehensive approach to prevention and control, particularly in low-income and underserved communities where access is limited, and compliments other prevention and control strategies that involve individual and family change efforts.<sup>31-33</sup> This multi-level approach (individual-family-community) is consistent with public health theories that support the use of an ecological framework for health promotion and which emphasize policy and environmental interventions to maximize reach and sustainability of health behavior change efforts.<sup>34,35</sup>

In a review of small store interventions designed to promote healthy eating, common intervention strategies included increasing availability of healthier foods, particularly produce, utilizing point of purchase promotions and engaging the community. Less common strategies included business training and nutrition education. Significant impacts were found in terms of increased healthy food availability, improvements in store-owner reported sales of healthy foods, and improved customer knowledge and dietary behaviors.<sup>36</sup> Yet, despite this growing body of evidence, little has been written on the process and many logistical challenges of designing, implementing and evaluating small store interventions.

We posed 2 questions to address these gaps: (1) What are the main challenges affecting the feasibility, acceptability and success of small store interventions? and (2) How have previous small store

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interventions addressed these challenges?

To answer these questions, we drew from experiences implementing such interventions in 4 different regions of the US. Each of the studies described intervened to improve the food environment, and were evaluated at the store and (usually) consumer levels. We chose to use a qualitative case study approach due to the paucity of evidence on the experience of developing, implementing and evaluating small store intervention programs. Qualitative research approaches are especially suited to explorative, formative investigation.<sup>37</sup> Case studies are a strategy within qualitative research which focus on exploring bounded systems in depth and over time, using multiple sources of information.<sup>38</sup> We sought to inform practitioners, researchers, and others about how to address the challenges of small store interventions to maximize efficiency and improve potential effectiveness.

## METHODS

We used a case study approach, drawing, upon our experiences developing, implementing, and evaluating small store interventions ("cases") in 4 locations: Baltimore, Maryland; Minneapolis, Minnesota; Burlington, North Carolina and Philadelphia, Pennsylvania. Each coauthor (with the exception of KK) was the lead investigator of one of the intervention sites.

Based on the intervention trials described above, the authors followed a multi-step process to generate a set of lessons learned: (1) Each author reviewed all project documentation, publications and spoke with project staff in their site to formulate each case; (2) Authors compiled an initial extensive list of lessons learned across all cases and developed a set of key themes; (3) Authors discussed, prioritized, and refined key themes through conference calls and email communications; (4) The lead author then developed matrices based on the refined key themes, wherein each investigator and program staff members detailed their sites' experiences related to each theme; (5) Authors divided the themes, and then conducted a cross-case comparison and analysis of the data for each theme, including preparation of a summary response for each theme and key lessons learned focusing on shared experiences, as well as unique challenges; and (6) Finally, all coauthors further reviewed and refined the written summaries. The following section presents brief descriptions of each intervention case study, to provide some context and detail for the reader.

### Baltimore, Maryland

Strategies to improve the food environment in East and West Baltimore have focused on Korean American-owned small corner stores. The Baltimore Healthy Stores (BHS) program was implemented in 4 supermarkets and 28 Korean American-owned corner stores during 2004-2005.<sup>39</sup> Formative research and community planning in-

formed the intervention strategies used.<sup>7,40</sup> The BHS intervention focused on changing the food environment and providing education to store owners and adult customers. Environmental changes centered on increasing the availability of healthy items.<sup>40</sup> Storeowners were provided with stocking guidelines, promotional materials to create demand, incentive cards to wholesaler stores, and small supplies of promoted foods when necessary. To increase customer demand, locally appropriate materials (eg, posters, flyers) conveyed the benefits of healthier foods, and interactive sessions (eg, educational displays, giveaway items, taste tests) were conducted in stores. Stores increased stocking and sales of healthier promoted foods.<sup>41</sup> Customer results showed a significant improvement in cooking methods and frequency of purchase of promoted food, as well as a positive trend for healthy food intentions.<sup>39</sup>

During 2009-2011, a follow-up youth-targeted randomized trial, Baltimore Healthy Eating Zones (BHEZ), worked with corner stores and carry-outs to increase the stocking of healthier food. BHEZ also targeted changes to youth's knowledge, self-efficacy, and intentions to consume healthier foods. Fourteen recreation centers in low-income neighborhoods participated.<sup>42</sup> During the intervention, materials and activities such as taste tests, cooking demonstrations, giveaways, shelf labels, and point-of-purchase health materials were introduced in 7 intervention recreation centers, 18 local corner stores, and 3 carry-out restaurants. Participating stores stocked promoted foods and promotional print materials with moderate fidelity.<sup>42</sup> Interactive sessions were implemented with high reach and dose among both adults and youth aged 10-14. BHEZ reduced BMI among youth who were overweight or obese at baseline, and improving selected psychosocial factors.

### Minneapolis, Minnesota

The Minneapolis Healthy Corner Store program began in 2010 as an effort by the Minneapolis Health Department to increase healthy food access and address health disparities. The program was designed to improve compliance with the Staple Foods Ordinance,<sup>43</sup> which required all licensed grocery stores, including most corner stores, to carry specific amounts of basic food items, including fresh produce. Since 2010, 39 stores have participated in the intervention (9 in year 1; 30 in year 2). Each store received technical assistance to improve availability, affordability, and attractiveness of their fresh produce stock.<sup>44</sup>

Store recruitment and technical assistance were conducted initially by health department staff, and later shared with select community organizations. Stores underwent in-depth baseline assessments, in part, to understand opportunities and barriers to promoting produce sales in stores, including data at both the store and customer levels. Based on these data, individualized store enhancement

plans were developed and implemented by staff and/or community partners. Enhancements typically included store layout rearrangements to increase produce visibility; repurposing empty or underutilized cooler space for produce storage and display; hanging signage to advertise fresh produce; utilizing baskets for attractive display of produce; and grouping ingredients together along with recipe cards for the purposes of cross-merchandizing. Community engagement events (eg, taste tests, “buy-one-get-one” sales) promoted changes made within stores and helped drive client purchasing. Follow-up assessments were conducted at various intervals after the enhancement. Data from year one follow-up assessments in 7 stores indicated that 86% increased the number of varieties of fresh produce items available from pre- to post-intervention, with 71% doubling the number of varieties offered from their original levels. Post-intervention in year one, 100% of stores were compliant with the Staple Foods Ordinance compared to 78% pre-intervention.<sup>44</sup>

### **Burlington, North Carolina**

The Vida Sana Hoy y Mañana (Healthy Life, Today and Tomorrow) study was a randomized controlled trial to promote access to fruits and vegetables (FV) in small-to-medium sized Latino grocery stores (*tiendas*) in Mexican-origin communities in central North Carolina. The ultimate goal was to increase FV consumption among store customers. Formative research with managers, distributors, and customers, as well as store audits, informed the design and implementation of a multi-component intervention to improve the store’s social and physical environment. The intervention involved manager and employee trainings to improve their capacity to stock, market and sell fresh produce, funds to improve the structural environment of the store, and a food marketing campaign. With regard to the structural changes, the stores opted to improve their ability to sell fresh prepared produce given the needs of their clientele; this involved purchasing food bars and then marketing prepared produce through a campaign that included shelf tags, posters, recipe cards, business cards with messages for men, and interactive food demonstrations. Evaluation occurred at the store and customer levels<sup>30</sup>small-to-medium-sized Latino food stores. DESIGN: Four *tiendas* were randomized to a 2-month environmental change intervention or a delayed treatment control condition. Employees and managers were trained to promote F&V sales, including how to implement a food marketing campaign and installing store equipment to promote fresh fruits and vegetables. The primary outcome was self-reported daily intake of F&V among a convenience sample of customers (at least forty per store). Intervention stores increased the availability of vegetables but not fruit. Customers in the intervention stores reported a daily increase of one FV serving compared with control store customers.

A replication and extension of this intervention is currently underway in southern California with 16 stores being randomized to an intervention or a delayed treatment control condition. The intervention approach was modified based on extensive formative research to ensure that the approach used in North Carolina would translate to California. A more sophisticated food marketing campaign was developed to compete with other food marketing in the stores and training videos were produced to maximize their relevance and salience to managers and employees.

### **Philadelphia, Pennsylvania**

The Food Trust’s Healthy Corner Store Initiative (HCSI) grew out of the agency’s School Nutrition Policy Initiative, a nutrition-education-and-policy program that was shown to decrease the incidence of childhood overweight in low-income school communities over 2 years by half.<sup>45</sup> In 2010, in collaboration with the Philadelphia Department of Public Health, The Food Trust expanded the Philadelphia HCSI to more than 640 stores located in low-income neighborhoods with high rates of obesity and limited access to healthy food. The Food Trust provides technical assistance and resources for store owners who want to sell healthy food, but lack the skills and equipment to do so. The program includes a coordinated marketing campaign based on the Traffic Light Nutritional Food Labeling system, which uses red, amber, and green labels to help consumers quickly identify healthy food options (foods with a green or amber label can be eaten in moderation whereas those with a red label should be consumed sparingly). In addition, a menu of healthy food items that are recommended for introduction into the store, assessment strategies for documenting progress in making new items available and understanding from where items are supplied, as well as the potential for stores to receive equipment such as refrigeration, should they demonstrate need and commitment to the program. Evaluation demonstrated that citywide, stores participating in the network added a cumulative total of over 18,000 new healthy products, and stores at the most basic level of participation introduced an average of 36 new products.<sup>46</sup> Among participating stores, 90% introduced at least one fruit or vegetable item, 84% at least one whole-wheat product, and 82% at least one healthy beverage or snack. In addition, nutrition education curriculum for community members now includes an emphasis on healthy corner store shopping strategies.

From these 4 case sites, 7 key themes were ultimately identified, with 2 to 6 lessons learned within each theme. The themes are ordered roughly in terms of chronological sequence. The findings reported in this section reflect themes common to at least 3 of the sites. Site-specific findings are not the focus of the report, but we do report details from specific sites to illustrate many of the findings.



## RESULTS

### Theme 1. Establishing Relationships with Stores

**Lesson learned: match the cultural and linguistic characteristics of participants and program staff.** This match may be particularly important in the initial stages of the program (eg, recruitment), though it is also important throughout the process for trouble-shooting issues. Having this shared understanding facilitates communication and negotiation. In Baltimore, most small store owners are Korean American, and many speak limited English. Thus, having a Korean-speaking staff person was essential for explaining the program, communicating potential risks and incentives, and generally reassuring small store owners on a regular basis. In Philadelphia and Burlington, where a majority of store owners speak Spanish, having a Spanish-speaking staff person was also essential. Cultural and linguistic issues become an additional challenge when the store owner/manager's race/ethnicity/language preference does not match that of the customers; awareness of this nuance is critical to ensure relevance of the intervention component, whether it is focused on the store or the customer.

**Lesson learned: build a relationship with the store owners/managers.** Store owners/managers have important knowledge to share about their neighborhood and customers. Incorporating their knowledge of how to sell food may maximize intervention efforts. One method for establishing a relationship is to offer a clear list of incentives to store owners/managers for their participation. In Burlington, incentives were detailed in a mailed letter followed by face-to-face contact, as this was deemed more appropriate than unannounced 'drop-ins' where the owner/manager may feel pressured to participate. In addition, easing the stores into the program by requiring a smaller level of commitment initially and then slowly building up over time, as was done in Philadelphia, was another method for establishing a strong relationship. Minimizing the number of program staff members that the store owners have to work with helps build trust and rapport.

**Lesson learned: establish a partnership with local retailer associations.** This may be key for sustainability. For example, the Minneapolis program contracted with a local business association that already had connections with many store owners and was able to help with program activities and additional business development needs. However, researchers and practitioners are cautioned to give careful consideration to with whom they partner, and consult store owners/managers before doing so. In Burlington, attempts to partner with the State Department of Agriculture were met with resistance given that this agency was perceived as a licensing and enforcement agency and not a health promotion partner.

### Theme 2: Recognizing Store Owner/Manager

### and Customer Relationships

**Lesson learned: recognize the complexity of the store owner/manager and customer relationship.** Both across and within the 4 sites, this relationship was described as variable, from close and supportive to hostile and distrusting. The quality of this relationship is related to the store owners/managers' underlying motivation for promoting health. Relationship quality was moderated by whether there was a shared language and heritage, as well as concerns with shoplifting, particularly in high traffic neighborhoods. In Baltimore, a component of the BHS intervention aimed at store owners (in Korean) was a series of cultural guidelines for understanding how respect is shown and how to build rapport with community members. An additional moderating factor in Burlington was the types of customer services provided (eg, a prepared foods section offered additional opportunities for interactions).

**Lesson learned: include strengthening community relationships as a selling point in recruitment and program materials.** In Philadelphia and Burlington, it was important to the owners/managers that their customers felt welcomed and that they were responsive to customer needs. For store owners/managers in Philadelphia, this was accomplished by having an attractive outside store environment with colorful signage. Inside the store, owners/managers asked customers for feedback on promotional ideas and whether the store met their needs.

**Lesson learned: consider the store owners/managers' perspective carefully when designing the program.** A unique challenge in working with food stores is the store owner/manager's perception of lack of customer demand for healthier foods. A related concern is losing both money and customers if changes are not well-received. With increasing competition for market share because of other stores in close proximity and the increasing reliance on food from restaurants, owners/managers may be reluctant to make changes that may not be perceived as positive (or just may not be well-utilized) by their customers.

### Theme 3: Deciding on Intervention Approaches

**Lesson learned: begin with formative research.** All sites used a variety of formative research methods for program planning, including data collection at the customer and store levels. Data collection methods used varied from interviews with stakeholders, to focus groups with consumers to identify foods for promotion, to observational audits of the store environment; the selection of methods depends in part on the question of interest.<sup>47</sup> A common finding was that in addition to developing intervention strategies and materials that resonated with customers, separate materials and strategies were also needed to work with store owners/managers – and that all approaches had to be attuned to store owners/managers' business

practices. Formative research suggested that store owners/managers had to become engaged in program development to build interest and ownership. This was usually accomplished by training of store owners/staff and/or providing materials relevant to their business and in their own language.

**Lesson learned: start slow and build over time.** In all sites, store owners/managers were initially apprehensive about the potential negative impact of the intervention. This included concerns with crowding, increased shoplifting, and most commonly, that promoted foods would not sell, resulting in a subsequent loss of money. Small, but steadily increasing commitment/engagement on the part of the store appeared to be an effective approach. In Baltimore, this involved initial requests to stock a few shelf-stable foods, followed by later requests to stock higher risk more perishable foods. Some programs found that to build effective trust and rapport, a 6-8 month timeframe for relationship building was ideal.

**Lesson learned: tailor intervention materials to meet store limitations.** Small stores have limited shelf, wall, and advertising space. One way to accommodate these limitations was to implement programs in phases, where each phase focused on different foods/behaviors. This strategy introduced limited numbers of materials at the same time, but still allowed for message reinforcement. A variation on this approach was used in Philadelphia, designating 3 tiers of store readiness. Stores that were more ready received more intervention components (conversion, training, marketing, availability of new healthy products) than those that were less ready (marketing and new products only).

**Lesson learned: improve supply and demand at the same time.** All 4 sites utilized strategies that combined efforts to improve access to healthier foods in small food stores (supply), with educational and marketing approaches to encourage consumers to purchase these foods (demand). These efforts had to happen simultaneously, and be focused on specific foods to enhance the potential for success. In Baltimore, when corner stores were asked to stock low fat milk, taste testing, shelf labels and signage promoting the health benefits of low fat milk were used to encourage consumers to purchase this food. In Minneapolis, community engagement/ outreach activities were used to increase awareness of the store changes and to drive consumer demand.

**Lesson learned: build customer demand through interactive events.** Whereas increasing healthy food availability and improving signage (posters, shelf labels) are important, it also may be necessary to conduct interactive events to drive customer interest to the new and/or promoted items. Events can be used to promote new foods (through taste testing, cooking demonstrations, and answering questions), or can simply serve to let customers know the product is now being stocked. Interactive sessions in Baltimore and Min-

neapolis built community interest and engagement over time, particularly as intervention delivery staff were seen more frequently at the store.

**Lesson learned: engage store owners/managers through structural change.** The Burlington and Philadelphia studies implemented a substantial structural change component (eg, new produce refrigeration units, produce displays,) with great success and acceptability by store owners/managers. Structural changes were responsive to the expressed needs of small store owners/managers given that they were unlikely to have the funds available for these changes.

#### Theme 4: Getting Stores to Stock Healthier Foods

**Lesson learned: provide store owners/managers with assistance to establish an adequate supply of healthy items.** At 3 sites (Minneapolis, Baltimore, and Philadelphia), store owners/managers were relatively unfamiliar with stocking healthy foods. Two sites (Minneapolis and Baltimore) reported that procuring healthy items in a convenient and affordable way was a challenge. Program staff and owners/managers attempted to establish relationships directly with suppliers, wholesalers, or other local sources of healthy food. Affordable pricing, the ability to fill small orders sizes, and the capacity to offer store delivery were crucial components of a successful procurement system. In addition, store owner/manager education was needed to facilitate stocking of healthy items. In Minneapolis, staff found it necessary to provide training on fresh produce handling and merchandising. In Philadelphia, it was helpful to provide owners/managers with simple lists or images of healthy items so they knew what foods to stock.

**Lesson learned: encourage store owners/manager to maintain stocks of healthy foods by creating customer demand.** Once stores established a supply of healthy items, owners/managers needed to be encouraged to continue stocking these foods. All sites reported conducting promotional activities such as taste-tests to generate customer demand for new products. For example, in Burlington, customers had the opportunity to sample broccoli and other vegetables that many had never tried before. Owners/managers observed customers' positive reactions and increased sales of healthy items, along with reduced waste due to spoilage, motivating them to continue stocking these foods.

#### Theme 5: Evaluating Implementation and Effectiveness

**Lesson learned: measuring improved product availability and marketing is feasible.** Conducting visual inspections of store inventory using abbreviated versions of tools like the Nutrition Environment Measures Survey for Stores<sup>40</sup> or brief, item-specific visual audits<sup>14,33,41,42</sup> is largely feasible

and useful for tracking product availability. The case examples also determined that conducting interviews in stores was a worthwhile approach for assessing feasibility.

Several other data sources were successfully collected, including WIC sales data (obtained in Minneapolis from the State of Minnesota, with permission from store owners), customer intercept surveys, and visual store assessments (eg, to describe display of healthy foods, store appearance, etc).

**Lesson learned: obtaining reliable, accurate store sales data is challenging.** Across all sites, few small stores kept electronic records to track their sales, and many had only limited written sales records. Small store owners/managers restocked their stores 2-3 times/week based on their perception of what foods are needed or lacking on store shelves, rather than sales. Two sites were able to obtain store owner/manager recalls of sales of a limited number of key foods over the past week, the longest viable recall period. In Baltimore, program developers experimented with collecting information about sales through regular observations, namely by gauging the disappearance of promoted foods from shelves. This approach is challenged by the fact that small store owners/managers frequently go shopping to restock their stores, sometimes every day, and it may be impossible for observers to capture the disappearance of foods.

Efforts to establish and maintain POS (computerized, point-of-sale cash register systems) are time-consuming and can require a significant investment in staff support as well as technical support from the POS manufacturer. In Philadelphia and Minneapolis, POS data were collected collect data on a weekly basis for a small subset of stores (5-7 stores at each site); however, stores needed to work closely with staff, give up a portion of their counter space for technology, be patient with glitches, and consistently use the technology for the process to work. Further, challenges in compiling and categorizing items in a product database of over 10,000 items should not be underestimated. However, POS systems in small stores result in real-time, objective reporting of store sales and provide great power for measuring changes in purchase decisions.

Collecting wholesaler data as a method of tracking store sales was another approach that had mixed success. Some small stores used one primary wholesaler, and it may be possible to use wholesaler data as a proxy for sales as long as the categories of foods being tracked are exclusively purchased at that wholesaler. However, many foods (soda, ice cream, bread, chips, etc.) are restocked by distributor delivery trucks. In Burlington, an attempt to get produce distributor receipts revealed that the same document was supplied week after week with updates indicated in handwritten notes.

**Lesson learned: measuring changes in customer diet is challenging.** Several approaches to measuring changes in diet have been utilized.

Intercept interviews with store shoppers or local residents utilizing short food frequency questionnaires (FFQ) or dietary screeners hold promise as a strategy because of their feasibility in stores; however, challenges remain in identifying appropriate tools for low-income, ethnically diverse customers appropriate for completion in the small store environment (ie, where time and attention to completing the FFQ may be limited).

## Theme 6: Maintaining Changes in the Stores

**Lesson learned: maintain changes through continued reinforcement of activities.** Three sites noted that continuing activities and ongoing contact over time are important for ensuring that stores maintain positive changes. These on-going activities could include drop-in inspections, program staff visits, and/or reinforcement activities to maintain customer demand.

**Lesson learned: encourage store owners/managers to adopt infrastructure or systems-based changes when feasible.** The Baltimore and Philadelphia sites noted that providing infrastructural changes that support continued stocking of healthier foods (such as provision of produce refrigerators and display units) was helpful for store owners/managers in maintaining positive changes. It was helpful to use a systems-based approach, such as working with vendors/wholesalers to make sure healthier foods were available. However, programs also noted the long-term challenges with infrastructure changes, which included ensuring that store owners/managers continued to use the equipment for its intended purpose. Owners/managers can easily use the equipment to market less healthful products, and on-going communication about using this equipment to maintain appropriate products is important.

## Theme 7: Identifying Methods for Dissemination and Sustainability

**Lesson learned: reaching academic, policy and food store audiences are key for dissemination.** Dissemination strategies were typically targeted to specific audiences, including practitioners, government officials, researchers, and store owners/retail associations. Among these audiences, a common challenge was a program's ability to articulate bottom-line financial impacts of shifting to a healthier product mix. Outreach to practitioners and researchers was more common than outreach to store owners/managers and retail associations.

The most commonly used strategies include: (1) publication in peer-reviewed journals; (2) preparation of policy briefs; (3) websites with program information, including educational materials developed; (4) working with local and national grocer associations to disseminate findings; (5) meetings to share impacts with governmental agencies; and (6) store visits to share program impacts with owners/managers.



**Lesson learned: sustainability is strategy dependent.** Some facets of interventions were easier to maintain than others, and researchers are currently grappling with how to enhance sustainability. In the best case, new products sell well and there are few barriers to maintaining such a change. However, sustaining signage or messaging elements may be more challenging, because they can require regular replacement or updates. Similarly, for interventions where store owners/managers receive components gradually, and are given ongoing training and technical assistance, identifying ongoing funding opportunities to maintain program staff training is a challenge. Relying on community volunteers, although admirable, has limited success. To identify promising strategies for sustaining program changes, an interdisciplinary advisory committee made up of practitioners from the food industry, marketing, and neighborhood store associations is currently being piloted in California. Certification programs, such as that in Philadelphia, are a new policy mechanism to support program sustainability at a local level.

## DISCUSSION

This paper presents the experiences and lessons learned from multiple small food store intervention programs. When implementing a healthy small store intervention, it is critical to recognize that whereas the ultimate goal is health promotion, at least 2 key stakeholders must be satisfied for an intervention to last: the store owner/manager and the customer.<sup>48</sup> Efforts to balance health promotion with stakeholder interest are the foundation for success. The small store interventions described sought to intervene at both the store owner/manager level, by working with them to increase access to healthier foods in their stores; and at the consumer level, by providing education and marketing to create demand for these foods.

Experiences from these 4 communities indicate that small store interventions face a variety of challenges that impact feasibility, acceptability, and long-term success. Throughout the intervention design, implementation, and evaluation stages, program staff had to be flexible and adapt to the unique needs of their communities. Particularly challenging issues included: understanding and accommodating the complex dynamic between program staff, store owners/managers and customers; choosing appropriate interventions that met the needs of each community; balancing sustainability with the need for ongoing support; and identifying effective mechanisms for sharing successes and lessons learned. Whereas each site adapted its interventions in various ways to address these issues, the main challenges were consistent.

A consistent challenge lies in selection of foods to stock, and how best to promote these foods. This needs to be done with the assistance of formative research, environmental assessments, and com-

munity/stakeholder engagement activities.<sup>49-52</sup> The initial focus of many small store interventions often tends to be on supply issues (ie, how to get store owners to obtain and stock healthy foods), but it is important to recognize that demand issues are equally important. If demand for healthy products is not generated among customers, then products will not sell and store owners/managers, in turn, will be reluctant to stock and/or promote these products in the future. Successful small store interventions need to maintain a delicate balance in their attention to supply- versus demand-side issues.

The review presented here has some limitations. The review is limited to 4 robust, yet regional small store interventions; as such, it may reflect experiences unique to those regions or strategies. Our approach to data collection and synthesis was rooted in practice, and centered on reflections rather than ongoing, prospective data collection. Limitations of this method include possible mis-recollections or missed challenges because of elapsed time since the challenge was encountered.

Several areas of further work are immediately needed to advance the field. First, we need to consider how to communicate these findings and work most effectively with policy makers. There is budding interest in many settings to expand and institutionalize small store certification programs, but few agreed-on strategies to accomplish this. In March 2013, Philadelphia launched a city-wide corner store certification program. As guidelines for healthy store certifications emerge nationally, the most effective mechanisms for enforcement and maintenance of such strategies are directions for future research. Until certification programs become widespread, local areas should use successful compliance with other requirements of store owners/managers, such as minimum stocking requirements of fresh FV through the WIC program as a means of promoting healthy small store interventions to owners/managers, incentivizing their participation by assisting them in meeting such criteria.

A related challenge and area for future work is identifying strategies to limit and/or discourage the consumption of unhealthy foods. To date, this issue has largely not been addressed in small store interventions,<sup>36</sup> particularly in that a large proportion of products stocked by these stores tend to be energy-dense, prepackaged convenience foods that are not healthy.<sup>9,14</sup> Results of one small study showed that calorie information signage on sugar sweetened beverages in small stores reduced the purchases of these beverages by nearly 50%;<sup>53</sup> however, the broad acceptability of these types of strategies by store owners/managers and the feasibility of implementation on a larger scale is unknown. Particular care needs to be taken in ensuring that overall profit margins are not reduced in these settings to maintain positive relationships with store owners/managers and facilitate sus-

tainability over time.

In conclusion, increasing access to healthy foods in small food store environments is viable. Interventionists and researchers working in this area need to focus as much on increasing customer demand as on improving store supply for such programs to be successful. As these programs continue to develop nationally, and certification processes are implemented, efforts to document and disseminate challenges, opportunities and lessons learned as well as findings should be a priority.

## Human Subjects Statement

Institutional Review Board approval was obtained from each author's respective institution for the research studies that are described in this manuscript.

## Conflicts of Interest

No conflicts of interest

## Acknowledgments

This paper was commissioned by the Robert Wood Johnson Foundation through its Healthy Eating Research program. The content is solely the responsibility of the authors and does not necessarily represent the official views of the funders. All authors were involved in the conceptualization of the manuscript, and generated themes. Authors were assigned sections to write and the first author prepared a first draft of the complete manuscript. All authors reviewed several drafts of the manuscript and approved the final version.

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